



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

bridge Gulf they were glad to find again some of the comforts of civilization in the huts of the hospitable Chinese who occupy the most advanced post of civilization in that region.

Bradshaw's journey has revealed the character of one of the large unexplored regions of Australia. About the same time David Lindsay was crossing the greatest unknown expanse in southwest Australia. He has now gone north to traverse an unexplored district in the west central part of the continent, and when he completes this journey there will be no large region in Australia that is not fairly well known in its general aspects.—*N. Y. Sun.*

GEOLOGY AND PALEONTOLOGY.

The Genus *Scolithus*.—Mr. Joseph F. James read a paper before the meeting of the Geological Society at Washington entitled "Studies in Problematic Organisms—The Genus *Scolithus*." After a lengthy review of the literature concerning this subject, the author discusses the fossils as follows :

"There have been described of the genus from North America the following species :

Scolithus (Fucoides) shepardii Hitchcock, 1833 (Triassic).

S. linearis Haldemann, 1840 (Lower Cambrian).

S. (Fucoides) verticalis Hall, 1843 (Portage).

S. clintonensis (n. sp.), proposed for *S. verticalis* Hall, 1852, preoccupied (Clinton and Medina).

S. canadensis Billings, 1862 (Potsdam).

S. minutus Wing, 1877 (Calceiferous).

S. tuberosus Miller and Dyer, 1878 (Cincinnati).

S. (Arenicolites) woodii Whitfield, 1880 (Potsdam or St. Croix).

S. delicatulus U. P. James, 1881 (Cincinnati).

S. dispar U. P. James, (*Eophyton dispar*), 1881 (Cincinnati).

S. minnesotensis (n. sp.), Winchell, 1884, described but not named (St. Peters).

The geological range of the genus appears from this list to be from the Lower Cambrian to the Triassic. *S. shepardii* from the Triassic does not differ in any essential respect from *S. linearis* from the Cambrian. It is impossible to separate *S. verticalis* of the Portage from *S. clintonensis* of the Clinton and Medina, or either of these from *S. linearis*. As we have already shown, *S. canadensis* and *S. linearis*

may be considered identical; while *S. minutus* from the Calceiferous and *S. woodii* from the Upper Cambrian of the Mississippi Valley may be said to be separable by no definable characters. *S. delicatulus* from the Cincinnati differs from *S. minutus* only in having the cavities of the tubes filled instead of being hollow. Finally, *S. minnesotensis* from the St. Peter is the same, so far as characters go, as *S. linearis* from the lower Cambrian.

It cannot be considered as at all probable that the annelid living in the lower Cambrian and making the perforations we know as *S. linearis* persisted in the same form through all later geological periods into Triassic time. Mr. Walcott does not think it probable that the same species ranged even through Cambrian time, to say nothing of a much greater time-range. Yet he places forms from the lower and from the upper Cambrian under the same specific name. On the same principle we should unite all the species, in whatever geological horizon they may occur, under one name, for there are no characters to distinguish one from another. But this does not seem advisable, and under the circumstances I would propose that the geological position shall decide the name to be used. Thus, *S. linearis* might be applied to forms from the lower Cambrian rocks of the eastern United States; *S. canadensis* to those occurring in upper Cambrian strata of the eastern United States, and *S. woodii* to those from strata of similar age in the upper Mississippi Valley; *S. minutus* might be the name for the form in Calceiferous strata; *S. minnesotensis* might be applied to the forms from the St. Peter, and *S. delicatulus* to those in Cincinnati rocks; *S. clintonensis* might be applied to those from Clinton and Medina strata, *S. verticalis* to those from the Portage, and *S. shepardii* to those from the Triassic. It is probable, also, that a name should be given to forms collected from other horizons, say *S. arizonicus* to the form from the Grand cañon in Arizona.

Several objections may be urged against such an arrangement. One of these is that it robs the genus of all value as indicating the age of the rocks in which it occurs. This is true. It deprives *Scolithus*, too, of any value as a means of correlating rocks of two different sections, one with another. This is also true, and so it should be. No valid argument can be brought forward to justify placing the rocks of two widely separated areas in the same terrane upon the evidence of such a form as *Scolithus*—a form of indefinite character, of indefinable features, of perplexing variability, and of wide time range. The use of forms of this sort as a means of correlation is even worse than the use of lithological characters. Time does not permit mentioning the

erroneous correlations resulting from the use of *Scolithus*, but they are numerous enough.

The second objection urged will probably be the multiplication of names resulting. Some will, perhaps, prefer to let *Scolithus linearis* do duty for all the forms if they can be shown to be indistinguishable, but this objection does not seem to me to be a valid one. Dr. C. A. White, in a paper read before the American Association for the Advancement of Science last year and published in volume 39 of the Proceedings, in speaking of applying new names to fossils occurring in two different formations, says that "if a given formation is found to bear a fossil fauna the component members of which, with such exceptions as have been referred to (i.e. forms considered identical in two formations) are all unlike those of any other known fauna, I think it admissible to treat the whole fauna as new and to give a new name to each species" (p. 242). My own studies of *Scolithus* led me to adopt this method previous to reading Dr. White's paper, and I have therefore proposed, as seen above, to characterize the species of *Scolithus* upon the formation, and not, as has been done at times, the formation on the occurrence of the species."

The paper by Mr. James was discussed by N. S. Shaler and E. W. Claypole. Professor Shaler advised neglecting altogether the specific names for *Scolithus*, since it is at best only a hole in the rock. He also regarded Billings' observations on sponge spicules as valueless, because anything so widely distributed as these spicules would be swept into small crevices or openings, such as the *Scolithus* perforations. Professor Claypole remarked that *Scolithus* persists to the present time.

The Sirocco as a Disintegrating Agent.—Mr. John B. Cooke cites a number of facts (Science-Gossip Jan. 1892) to show that the sirocco is an important agent in planing down and molding the hills and valleys of the Maltese Islands. Its effect may be traced on every rock and boulder. Of the exteriors of walls and houses, the side that is exposed to the sirocco always presents an eroded and time-worn appearance, while the other sides are fresh and unworn. It is not uncommon to find stones almost completely worn through. In the old fortifications that were erected by the Knights of St. John, such phenomena are of frequent occurrence. From a series of calculations of the rate of the erosion of the Globigerina Limestone in a number of buildings of known ages, Mr. Cooke estimates the denudation due to the sirocco at 22 tons of material annually from every acre of surface.

Vertebrate Fossils at Samos.—At a recent meeting of the Academy of Sciences of Paris, M. Forsyth Major gave a very nearly complete list of the fossil vertebrates found at Samos. Of the forty-three species of mammals discovered, twenty-five at least were equally represented at Pikermi, thirteen at Maragha, seven at Baltavar and seven at Mount Léberon, so that the inference is that these different formations are probably of the same geologic age.

In fact, the author has remarked, in a new communication to the Academy, that this fauna can now be traced continuously from Spain to eastern Persia, thus proving continental conditions; so true it is that a marine equivalent is not found in these countries. The uniformity of the fauna suggests a uniform environment, and especially of climate throughout this great tract of country. Also, the vast number of horses and ruminants reveals the existence of plains or plateaus of wide extent. All these conditions permitted the distribution of the animals over an enormous area in a comparatively short time, and the mingling of individuals from localities far distant from each other would be another factor preventing a tendency to vary. (*Revue Scientific*, 28 Nov., 1891.)

Geologic Correlation by Means of Fossil Plants.—In a paper read before the American Association for the Advancement of Science at Washington, Aug. 21, 1891, Mr. Lester F. Ward showed what an important factor is Paleobotany in the determination of the age of deposits widely separated, as well as more nearly related formations. For this determination, however, it is necessary to have a body of facts; i.e. a fair series of good specimens. He instanced, as examples, the beds of Chardonet, referred by Elie de Beaumont to the Mesozoic which are now known to be Carboniferous. Or, coming nearer home, the clays of Gay Head, Mass., which geologists had described to be of tertiary age, until the discovery by Mr. White of a bed of fossil plants which proved to be types of the Amboy clays of New Jersey, and therefore represent the Cretaceous.

In order to make use of the principles of Paleobotany in geologic correlation, Mr. Ward proposed the preparation of tables of distribution, (1) American, (2) Foreign which should contain (a) identical and (b) related species. The fact to be borne in mind is that correlation established by such data is homotactic and not necessarily chronologic. (*Am. Geol.* Jan. 1892).